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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/094, 030 06/09/98 DUPUY

P 050496

EXAMINER

TM02/0823
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ART UNIT PAPER NUMBER

2662

DATE MAILED:

08/23/01

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	DUPUY, PIERRE
Examiner Joe Logsdon	Art Unit 2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 30 July 2001.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-7 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-7 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) Interview Summary (PTO-413) Paper No(s) _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

Withdrawal of Finality:

1. New grounds of rejection have been found, and Applicant's request for reconsideration of the rejections of the last Office Action is persuasive; therefore, the finality of that action is withdrawn.

Claim Rejections—35 U.S.C. 112, First Paragraph:

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 1, 6, and 7 recite "consecutive transmission channels identifiable from said authorization channel using a predefined relationship." But the specification fails to provide any detail on how one might derive a "predefined relationship" for the consecutive channels. According to the specification, "The choice of the number of time slots allocated to the mobile station for transmission... is made by the network... *as a function of the transmission needs* of the network... [S]aid authorization channel is displaced *as a function of* the quantity of data to be transmitted by the mobile station... In addition, the number of transmission channels allocated for reception is reduced when the number of said consecutive channels is increased, so as to

retain a guard time that is *long enough* between reception and transmission, thereby making half-duplex mode operation possible" [emphasis added] (page 9, lines 20-37). The specification fails to provide any working example that might clarify the meaning of "function." No mention is made of the manner in which the number of time slots might depend on the "transmission needs" of the network or the quantity of data to be transmitted by the mobile stations. No explanation is provided for how one might determine whether the guard time is "long enough" to enable half-duplex mode operation. The specification therefore fails to enable one of ordinary skill in the art to make or use the invention as claimed.

Claims 1, 6, and 7, further depend on a "controller" which, as mentioned in claims 6 and 7, enables the method to operate. The specification provides no enabling detail on how to make or use such a controller. Figures 3 and 4 simply depict the controller as a rectangle. The specification therefore fails to enable one of ordinary skill in the art to make or use the invention as claimed. Claims 2-5 depend on claim 1 and are therefore similarly rejected.

Claim Rejections—35 U.S.C. 112, Second Paragraph:

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Claims 1, 6, and 7 recite "identifiable from said authorization channel using a predefined relationship." These words fail to describe the

nature of the relationship. According to the specification it is the physical properties of the allocation channel itself that are used to determine the data transmission channels. For example, if an allocation is transmitted in time slot T, then the allocation needs no code that would indicate the data transmission channels because the data transmission channels would simply be time slot T and several consecutive time slots whose locations are related to T according to a predefined relationship (page 7, lines 9-17). Claims 2-5 depend on claim 1 and are therefore similarly rejected.

Claim Rejections—35 U.S.C. 103(a):

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engel et al. in view of Crisler et al.

With regard to claims 1, 6, and 7, Engel et al. discloses a system for performing a method of allocating data transmission channels to a group of mobile stations, where one embodiment involves half-duplex mode, in a mobile telecommunications network of the type using packet (“message bursts”) mode and having multiple access by multiplexing (FDMA and TDMA) transmission channels, in which method the transmission channels (time slots) allocated to a mobile station, respectively in a “down” direction from the network to the mobile station, and in the “up” direction from the mobile station to the network, can change at each “allocation period” (“n time frames”); and a transmission authorization (“assignment information A, B, C”) received over a transmission channel (specific frequency and time slot) in the down direction for a given allocation period indicates that consecutive transmission channels (time slots with a given frequency) identifiable from the authorization channel (specific frequency and time slot) using a predefined relationship, are allocated in the up direction (column 3, line 36 to column 4, line 22; column 5, lines 40-47; column 6, lines 32-37). Engel et al. fails, however, to teach a system that performs a method in which a transmission authorization received over a transmission channel in the down direction for a given allocation period indicates that the transmission channel and consecutive transmission channels are allocated in the up direction for the following allocation period; instead, Engel et al. teaches that allocation of a set of predetermined channels—all different from the channel used for the allocation—are allocated for the same allocation period (column 4, lines 18-22). Engel et al. suggests, however, that consecutive channels can be

allocated (Fig. 2). Crisler et al. discloses a time slot allocation method wherein a time slot allocator allocates N consecutive uplink time slots (abstract; column 3, lines 3-7; column 5, line 55 to column 6, line 5). It would have been obvious to one of ordinary skill in the art to modify the invention of Engel et al. so that consecutive channels are allocated, as in Crisler et al., because, as taught in Crisler et al., such an arrangement would allow mobile stations to transmit messages more quickly when other stations are not currently transmitting, i.e., throughput and time delay would be improved. Engel et al. further teaches a preferred embodiment comprising a satellite that is in earth orbit (column 3, lines 44-49). Because of the distance travelled by the signals to and from the satellite, as well as the time it takes to receive, process, and retransmit the signals, a significant time delay is incurred between the time of transmission of a control signal and the time of transmission of data in a channel allocated by the control signal. Crisler et al. teaches that when uplink time slots are unavailable due to previous consecutive time slot allocations the time slot allocator can queue time slot allocation requests (column 4, lines 35-39); this suggests that time slot allocation can take place during allocation periods ("frames" in Crisler et al.) prior to those in which the data is transmitted. It would have been obvious to one of ordinary skill in the art to modify the invention of Engel et al. so that a transmission authorization received over a transmission channel in the down direction for a given allocation period determines the data transmission channels that are allocated in the up direction for the following allocation period, as suggested by Crisler et al., because such a method would allow the fixed station (control terminal) to change transmission channel allocation depending on properties of the mobile stations (as well as priorities of their messages) that request transmission channels during the allocation period ("n time frames") (column 4, lines 37 46; column 5, lines

40-47; column 8, lines 45-56; column 9, lines 26-41). Engel et al. fails to teach that the same channel that is used for transmitting the allocation is used for transmitting the data. Examiner takes Official Notice that the transmission of a control signal using a given channel (e.g., time slot) in order to signal that a device is allocated the same channel for transmission of data has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Engel et al. so that the same channel that is used for transmitting the allocation is used for transmitting the data because Examiner takes Official Notice that such an arrangement has been well known in the art as an efficient means of control that would allow other information to be transmitted to the mobile station through the authorization channel because relatively little information would be required to allocate the time slots.

With regard to claim 2, although Engel et al. fails to explicitly teach a system that performs a method in which a window is used to determine the allocated transmission channels, a system that performs a method in which a transmission authorization received over a transmission channel in the down direction for a given allocation period indicates that the transmission channel and consecutive transmission channels are allocated in the up direction for the following allocation period inherently employs a “window,” as the term is defined in claim 2.

With regard to claim 3, Engel et al. fails to teach a system that performs a method in which the location of the authorization channel is varied to increase or decrease the number of consecutive channels, depending on whether the quantity of data increases or decreases, respectively. Examiner takes Official Notice that variation of the location of the authorization channel to increase or decrease the number of consecutive channels, depending on whether the quantity of data increases or decreases, respectively, has been well known in the art. It would

have been obvious to one of ordinary skill in the art to modify the invention of Engel et al. so that the location of the authorization channel is varied to increase or decrease the number of consecutive channels, depending on whether the quantity of data increases or decreases, respectively, because Examiner takes Official Notice that such an arrangement has been well known in the art as an efficient means for allowing rapid adaptations to changing demands on network resources.

With regard to claim 4, the system taught in Engel et al. inherently reduces the number of transmission channels allocated for reception when the number of channels allocated for transmission is increased when two half-duplex mobile terminals successfully communicate, if such a reduction is necessary for half-duplex-mode operation.

With regard to claim 5, Engel et al. fails to teach a system that performs a method in which the size of the window is decreased for transmission by the mobile station of acknowledgments so that the number of channels allocated for the mobile station to listen to the network is increased. If the invention of Engel et al. were modified to teach a system that performs a method in which a window is used to determine the allocated transmission channels, as described above, and the size of the window were decreased for transmission by the mobile station of acknowledgments, the invention of Engel et al. would inherently increase the number of channels allocated for the mobile station to listen to the network. It would have been obvious to one of ordinary skill in the art to modify the invention of Engel et al. so that the size of the window is decreased for transmission, by the mobile station, of acknowledgments because the guard time required for acknowledgements can be made smaller than that required for other

messages because a relatively small quantity of information is transmitted in an acknowledgement, and such an arrangement would make efficient use of the available time slots.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fulghum is cited to show the state of the art.

Response to Arguments:

10. Applicant observes an apparent contradiction between the first two Office Actions and the Response to Arguments given in the second Office Action. The source of the confusion is explained in what follows.

In the second Office Action, at page 3, fourth line from the bottom, a sentence was misworded. The statement "instead, Engel et al. teaches *that this allocation* is for the same allocation period" [emphasis added] implies that the element "the transmission channel," i.e., the same channel as that used to transmit the allocation, is taught by Engel et al. when, indeed, it is not. The same statement also implies that the element "consecutive transmission channels" is taught by Engel et al. when, in fact, it is only suggested by Engel et al. The portion of the same sentence that precedes the semicolon is accurate but incomplete because it does not explicitly state that all three elements are missing from Engel et al.

Claims 1, 6, and 7 state in part that a transmission authorization received in the down direction for a given allocation period does both of the following:

i. indicates that the transmission channel is allocated in the up direction for the following allocation period.

ii. indicates that additional, consecutive channels are allocated in the up direction for the following allocation period.

In the response to the first Office Action, Applicant maintained that Examiner stated that Engel teaches neither i nor ii above. Instead, Examiner merely stated that Engel fails to teach the combination of i and ii above. Applicant is, however, correct in stating that Engel et al. fails to teach both i and ii.

In the first two Office Actions, the three elements that Engel et al. fails to teach are not addressed individually in providing the motivation, and reasoning for the obviousness of a connection between the elements is not provided; as a result, it is unclear to which missing element each stated motivation applies. This Office Action corrects these deficiencies.

Applicant argues that, whereas Engel et al. teaches that the content of the assignment information is used, the claimed invention teaches that it is only the position of the assignment channels that is used. This feature is not, however, taught in any of the claims. Furthermore, contrary to what Applicant states, the claims do not teach a predefined relationship between adjacent time slots.

Applicant maintains that it is necessary for Examiner to provide motivation from Engel et al. for the required modifications. According to MPEP section 2144, however, “The rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art.”

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Logsdon whose telephone number is (703) 305-2419. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on (703) 305-4744.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

12. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314

For informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Joe Logsdon

Patent Examiner

August 15, 2001



HASSAN KIZOU
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